

Staff Presentation

January 25, 2001 ZEV Hearing

Air Resources Board

January 2001

Overview

- **September 2000 Board Meeting**
- **Staff proposed regulatory changes**
- **Issues**
- **Supporting Activities**

September 2000 Board Meeting

- **Reaffirmed commitment to the ZEV requirements**
- **Asked staff to address challenges**
 - **Near-term vehicle availability**
 - **Market stability**
 - **Public education**
 - **Cost**
- **Result--sustainable market for ZEVs**

Staff Activities

- **Meetings with interested parties**
- **October workshop**
- **Staff proposal**
- **Ongoing discussions**
- **Additional proposed changes**
- **Investigation of incentives, infrastructure and outreach issues**

Proposed Regulatory Changes

- **Staff rationale**
- **Key elements of staff proposal**
- **Effect of staff proposal on vehicle numbers, cost, emissions**
- **Detail of proposed changes**

Staff Rationale

- **Key conclusions**
- **Policy implications**
- **Resulting recommendations**

Conclusion--Volume Alone Not the Answer for ZEVs Today

- **Policy implications**
 - Force ongoing technology improvement
 - Avoid over-investment in near-term technologies
- **Recommendation**
 - Maintain mandate, but at reduced level

Conclusion--Gasoline SULEV PZEVs Will Entirely Fill 6 Percent

- **Policy implications**
 - Additional incentive needed for advanced technology vehicles
 - Higher credit for AT PZEVs within 6 percent will reduce number of ICE gasoline PZEVs
- **Recommendation**
 - Allow offset against ZEV requirement

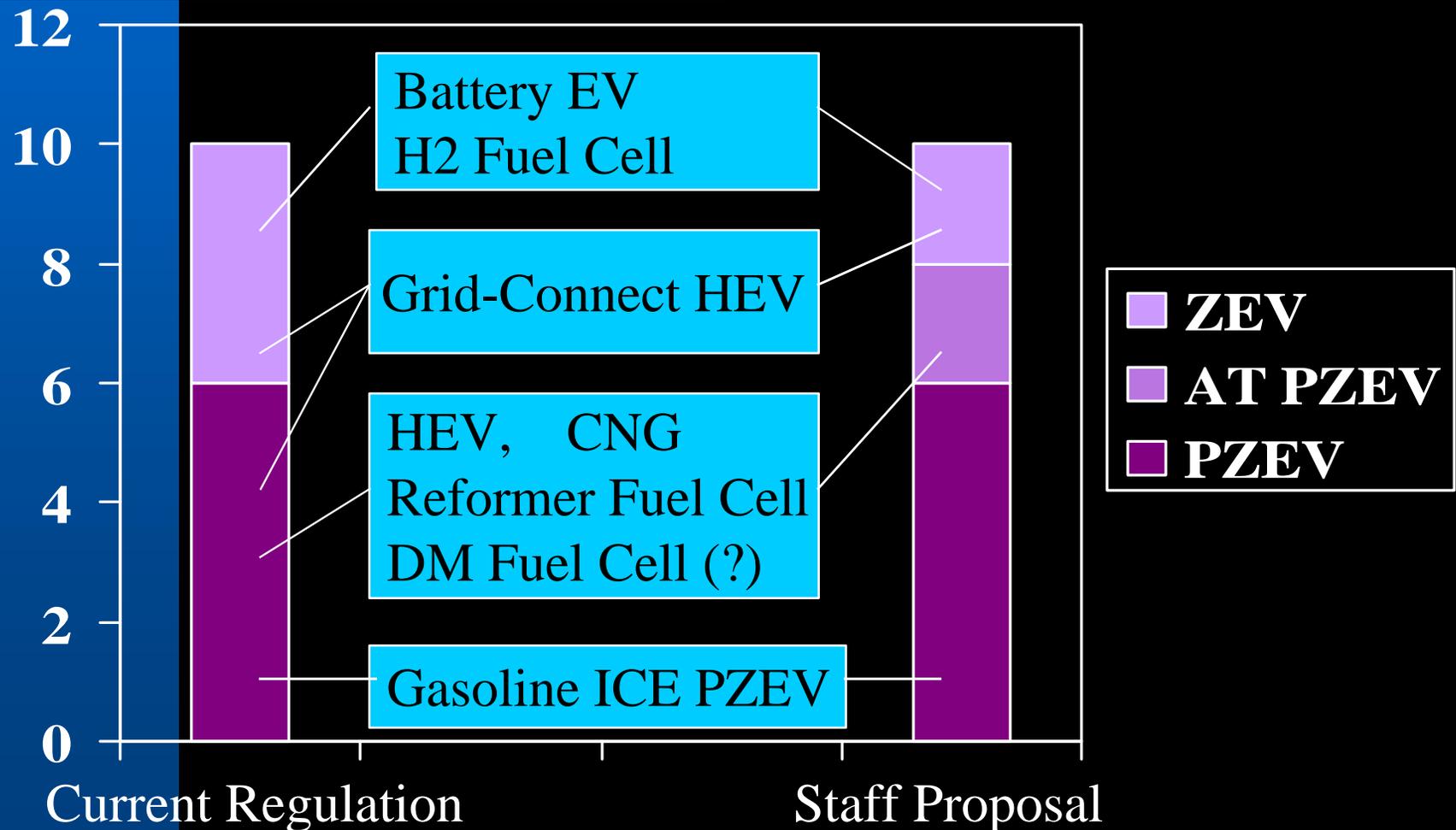
Conclusion-- Must Eliminate Uncertainty

- **Policy implications**
 - Reduce initial risk
 - Look for some degree of manufacturer support
- **Recommendation**
 - Provide sustainable ramp

Key Elements of Staff Proposal

- **Maintain core technology-forcing mandate**
- **Phase in ZEV and PZEV requirements**
- **Allow further ZEV reduction if offset with advanced technology PZEVs**
- **Gradually increase future ZEV requirement**
- **No multiple credits unless vehicle placed in service**

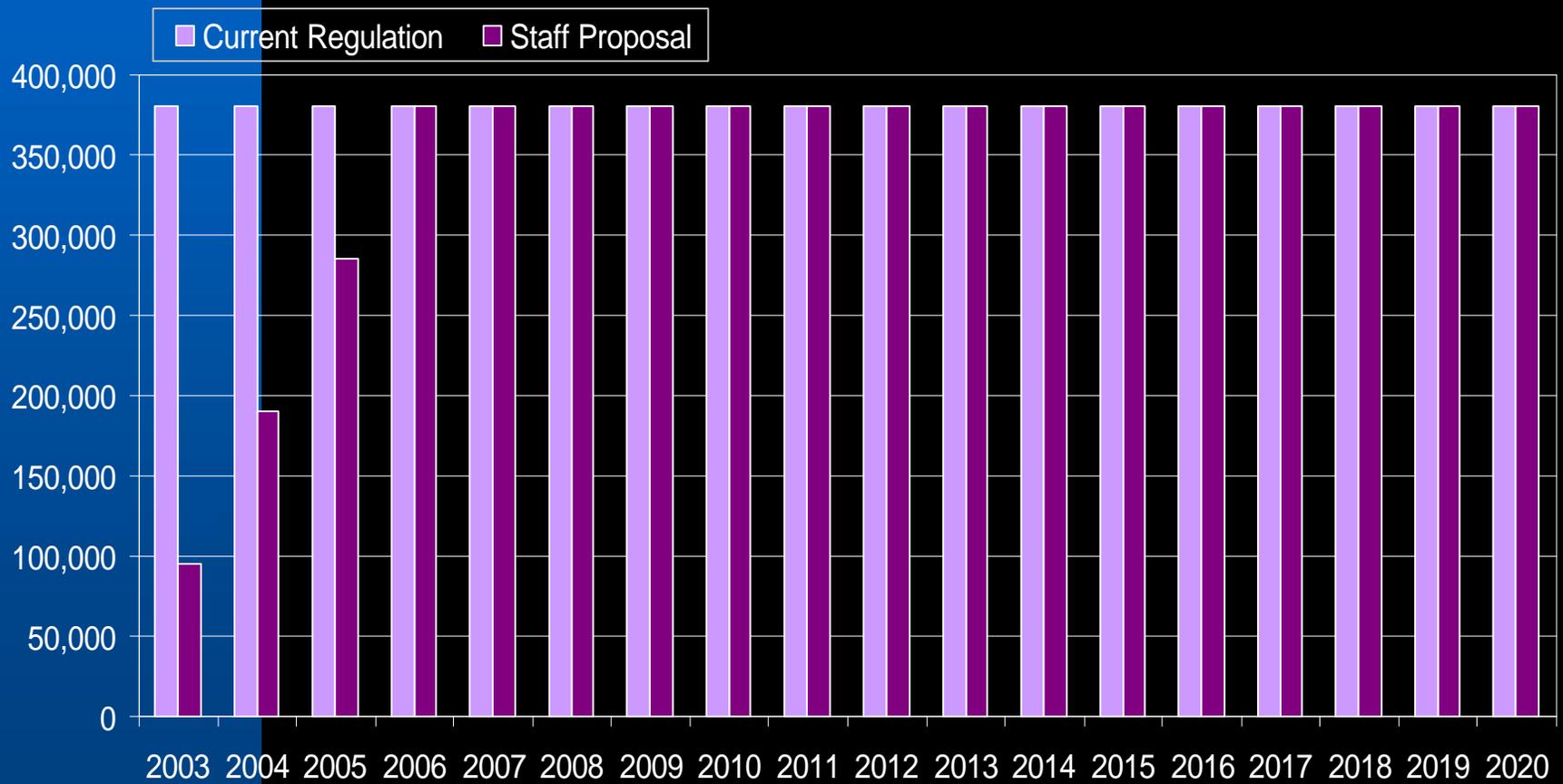
Overview of Vehicle Categories



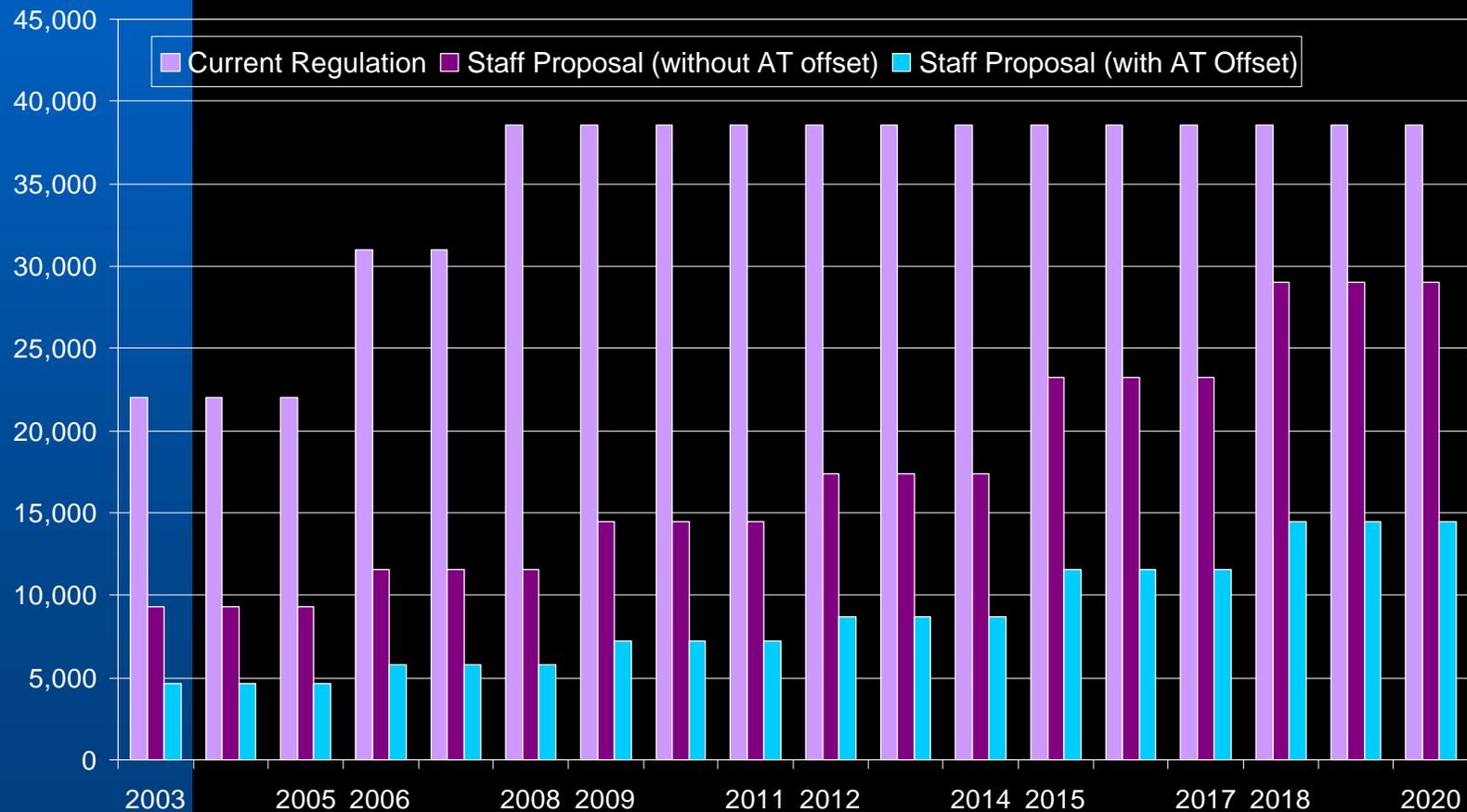
Effect of Proposed Changes

- **Number of vehicles**
- **Cost**
- **Emissions**

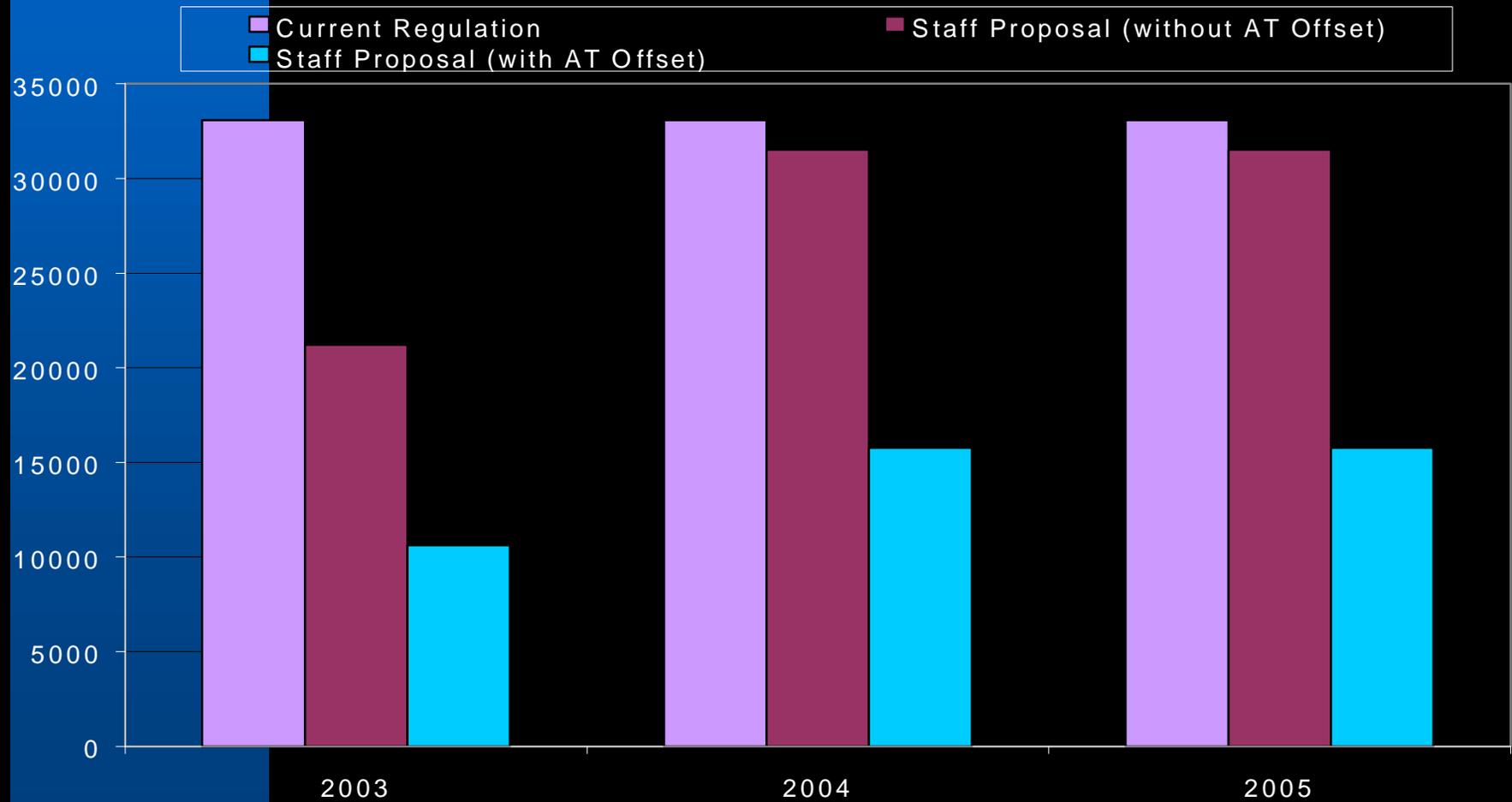
Number of PZEVs



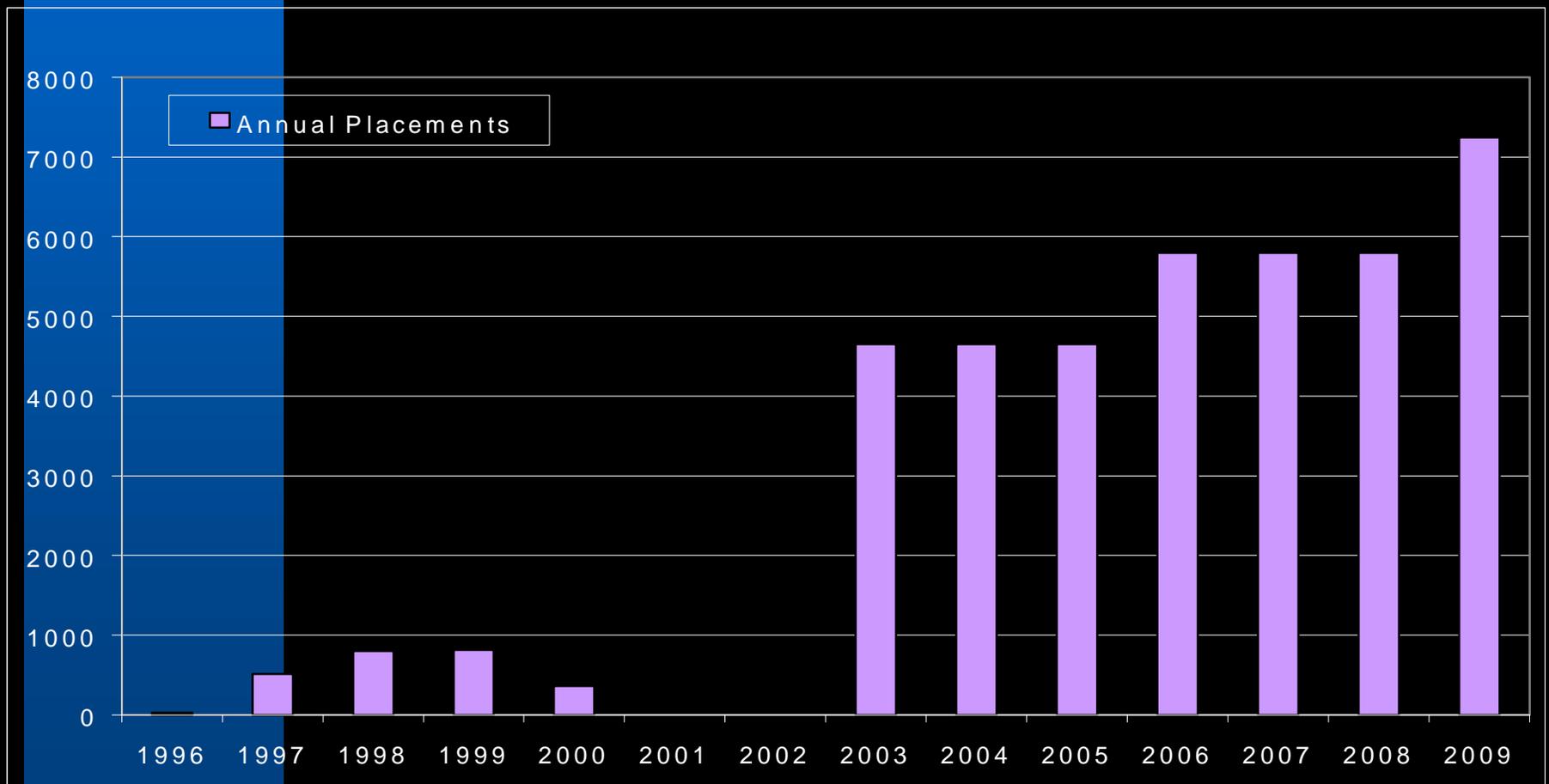
Number of ZEVs--Full Function



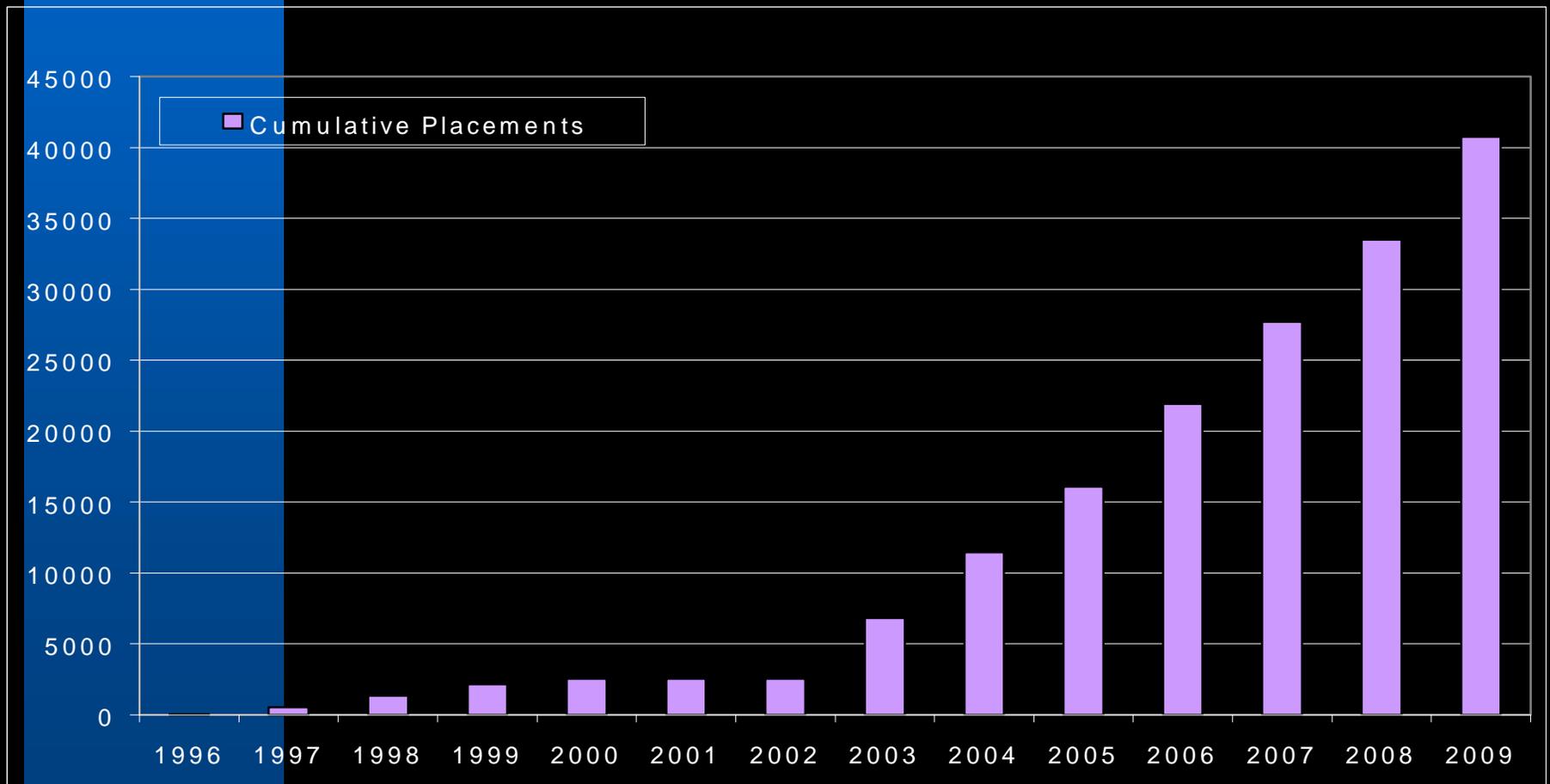
Number of ZEVs--Mixed



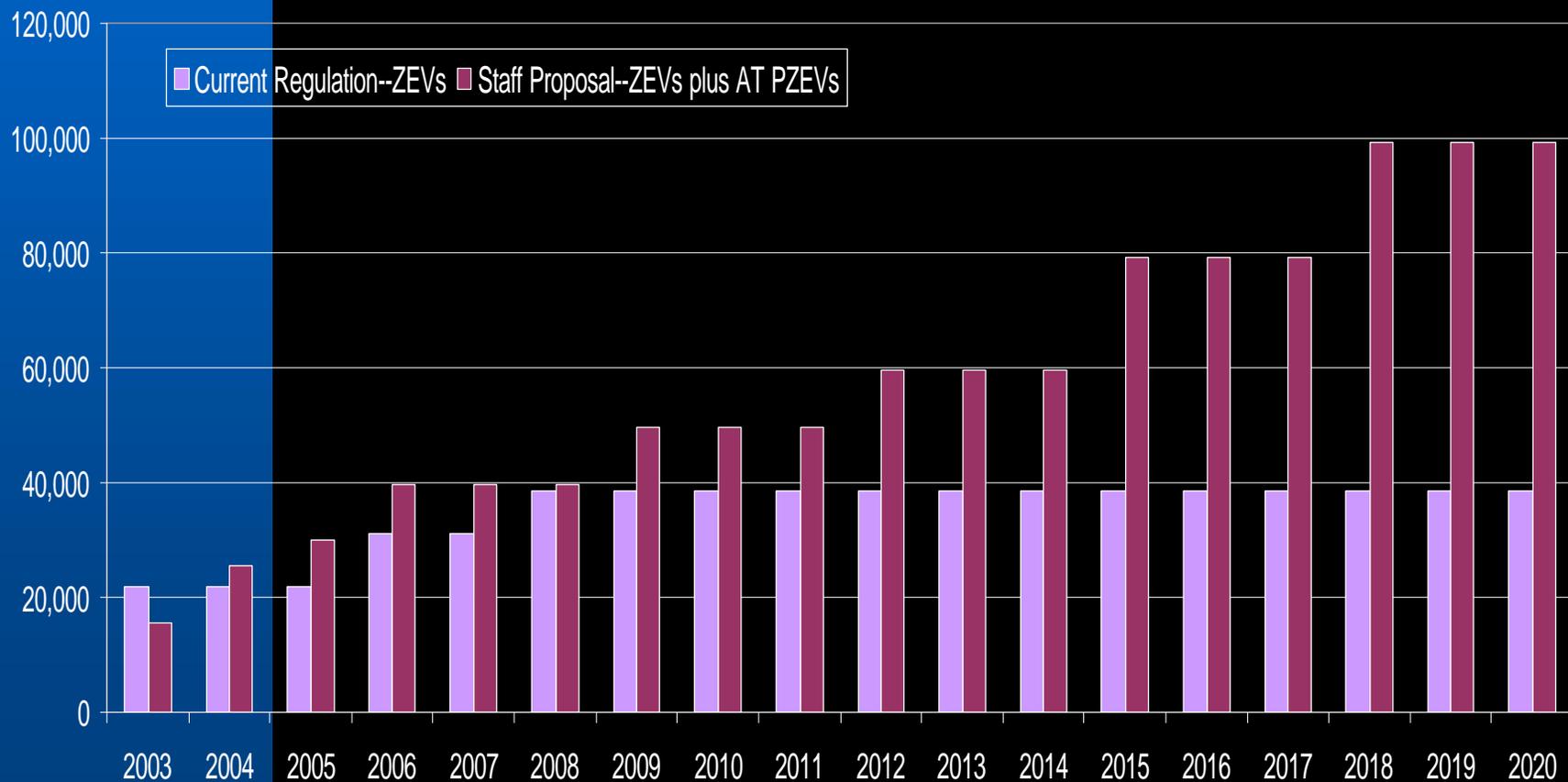
Annual ZEV Placements



Cumulative ZEV Placements



Number of ZEVs plus AT PZEVs



Cumulative Total, Mandate Vehicles



Effect of Proposed Changes

- **Reduced cost, per Board directive**
 - 2003 savings of \$130 M to \$400 M (depending on compliance strategy)
 - Savings decline in future years as PZEV numbers increase
- **Emissions neutrality**

Detail of Proposed Changes



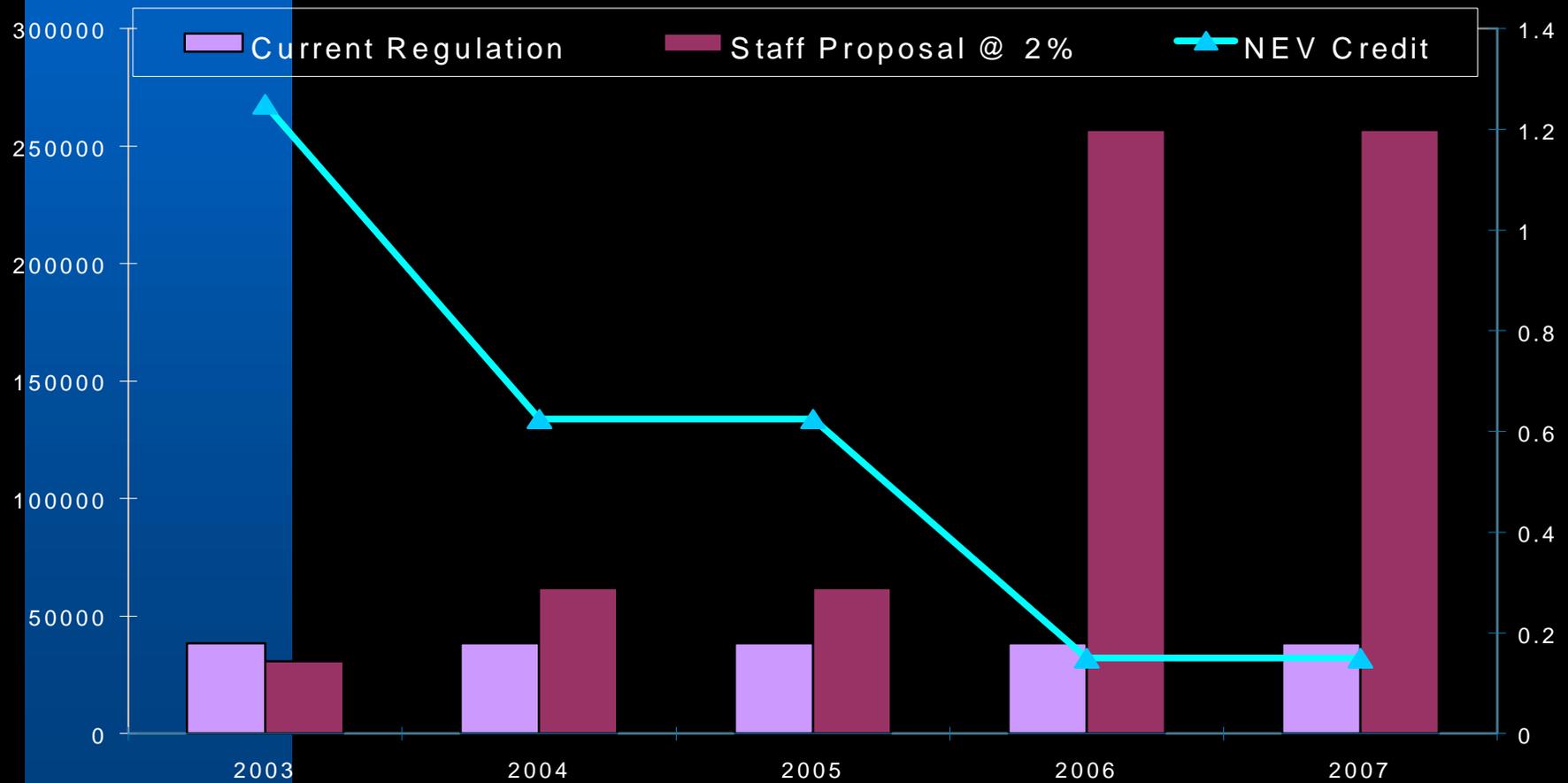
Phase in PZEV Introduction

	2003	2004	2005	2006
PZEV Requirement	25%	50%	75%	100%

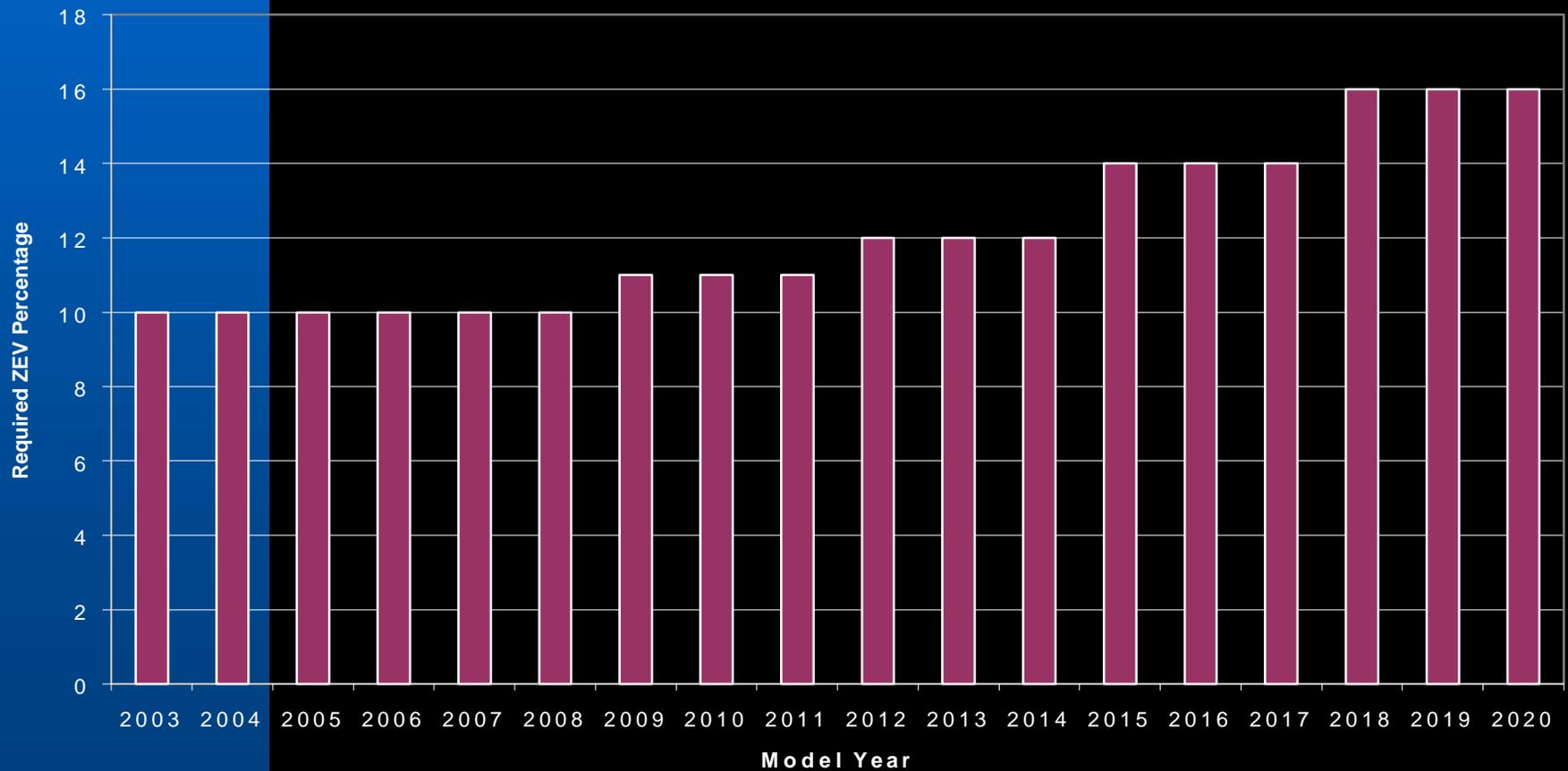
Phase in ZEV Introduction

	2000-2002	2003-2005	2006+
Multiplier	4.00	1.25	1.00

Reduce Future NEV Credits



Increase ZEV Percentage



Modify Vehicle Categories

- Allow hybrid electric vehicles with an all electric range of 20 miles or more to be counted as ZEVs
- Allow other advanced technologies that are not ZEVs to satisfy part of the ZEV requirement
(Vehicles with PZEV score of 0.4 or more)

Reward Extra PZEVs

- Give manufacturers that achieve double the PZEV phase-in level in 2003 and 2004 extra time to take advantage of the advanced technology option

Modify the ZEV Range Credit



No Fast Refuel Credit After 2008



Warranty Credits

- Provide in-service credits for ZEVs and zero-emission VMT vehicles that have an extended battery or fuel cell stack warranty, and remain in service in California

(0.1 x original credit per year after 3 years)

Advanced ZEV Componentry

- Earned by vehicles equipped with advanced ZEV componentry
 - Current regulation: 0.1
 - Staff proposal: 0.25
 - PZEV HEV will earn 0.45
(not counting efficiency)

Efficiency Multiplier (Revised)

- Calculate “California Miles Per Equivalent Gallon”
- Assign vehicle to class (subcompact, compact, etc.)
- Baseline = Sales weighted average fuel economy for class
- Efficiency score = Vehicle efficiency / 1.5 x baseline

For ZEVs, multiplier phased up as range multiplier phases down, beginning in 2005

For PZEVs, multiplier fully in force beginning in 2005

Demonstration Programs and Transportation Systems

- Allow credits for vehicles placed in an approved demonstration program
 - (Need not be “offered for sale”)
- Allow additional credits for vehicles placed as part of a “transportation system” approach
 - (Station car, car sharing)

Vehicles Placed in Service

- Require that vehicles be placed in service to earn multiple credits
 - (Can't sit on dealer lot)

Determining ZEV Obligation

- Provide certainty regarding the sales volume number used to determine the ZEV obligation
 - Current regulation: 2003 obligation based on 2003 sales
 - Staff proposal: 2003 obligation based on average sales for 1997-1999

Manufacturer Categories

- Increase the volume threshold for large manufacturers
 - Current regulation: 35,000
 - Staff proposal: 60,000

Manufacturer Categories

- Phase in ZEV compliance for intermediate manufacturers that transition to large
- Exempt independent low volume manufacturers from the ZEV percentage requirements

Issues

- **Number of vehicles, near and long term**
- **Treatment of various vehicle types**
 - **Grid connect hybrid electric vehicles**
 - **Neighborhood electric vehicles**
- **Fair Market Test**
- **Electricity demand**

Fair Market Test

- **Significant staff concerns**
 - **Premature decision on long term cost**
 - **Intrudes on Board authority**
 - **PZEV suspended even though feasible**
 - **Perpetuates uncertainty**

Electricity Demand

- **Most charging is off-peak**
- **Minimal impact**
 - **Today (2,300 vehicles)**
 - **Energy use: 0.005% of statewide total**
 - **Peak power demand: 0.004% of statewide total**
 - **2010 (77,060 vehicles)**
 - **Energy use: 0.136% of statewide total**
 - **Peak power demand: 0.118% of statewide total**

Supporting Activities

- Incentives
- Infrastructure
- Outreach

ZEV Incentives

- **Few local \$5,000 vehicle buy-downs remain**
- **New \$18 million program (AB 2061)**
 - about 2,000 grants now through 2002 (up to \$9,000 per ZEV)
- **Governor's \$50 million budget initiative**
 - about 10,000 grants through 2004 (up to \$5,000 per ZEV)

ZEV Incentives--continued

- **Staff's proposes expanded stakeholder working group**
 - **Coordinate state and local incentives**
 - **Assess need for new incentives**
 - **Identify feasible new programs, if needed**
 - **Support Federal incentive programs**

Infrastructure

- **Key recommendation--standardize charging systems**
- **Staff proposes that ARB adopt regulations June 2001**

Infrastructure--continued

- **Create stakeholder group to solicit input on:**
 - **Standardization**
 - **Maintaining and expanding public charging**
 - **Developing incentives for infrastructure**
- **Particular focus needed on incentives to support workplace charging**

Outreach

- **Expand current public education and outreach efforts**
- **Create collaborative relationship with stakeholders to develop and implement an outreach plan**

Outreach--continued

- **Build upon current and past stakeholder efforts**
 - Expand web page - www.Zevinfo.Com
 - Build on CalETC's draft "EV consumer awareness campaign"
- **Hold public workshop in late February**

Conclusion

- **Staff proposal addresses issues**
 - **Availability:** **Early introduction credits**
 - **Stability:** **Remove uncertainty**
Smooth ramp
 - **Education:** **Expanded effort**
 - **Cost:** **Phase in ZEVs and PZEVs**
- **Result--sustainable market for ZEVs**